sources during the last 3 years, ending December, 2008 in Punjab, which is equivalent to 5.8% of the total power distributed in the state. This also meets the minimum percentage (1%) specified by the State Regulatory Commission for purchase from renewable sources for the year 2007-08.

(b) Around 1272.39 million units during 2009 and 1596.78 million units during 2010, are likely to be generated from renewable energy sources in Punjab.

(c) The Government has taken several steps and measures to encourage and popularize setting up of renewable energy projects in the country including Punjab, which includes the following:

- Fiscal and financial incentives, such as, capital/interest subsidy, accelerated depreciation, nil/concessional excise and customs duties;
- Preferential tariff for grid interactive renewable power in most potential States;
- Benefit under Section 80-1A of Income Tax Act 1961 to undertakings setup for the generation or generation and distribution of renewable power;
- Directives under Electricity Act 2003 to All States for fixing a minimum percentage for purchase of power from renewable energy sources;
- Support for sector specific seminars/workshops/training programmes;
- Extensive publicity and awareness on the use of renewable energy systems/devices through print, postal and electronic media;
- Organization of special events like the Rajiv Gandhi Akshay Urja Diwas.

New and renewable energy generation

3272. SHRI MOHAMMED ADEEB:
SHRI SABIR ALI:

Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

(a) to what extent the new and renewable energy is supplementing the energy generation in the country;

(b) what is the potential of new and renewable energy;

(c) the areas where new and renewable energy generation is significant; and

(d) what are the Plans for the future?

THE MINISTER OF NEW AND RENEWABLE ENERGY (DR. FAROOQ ABDULLAH): (a) A cumulative grid-interactive power generation installed capacity of around 14,772 MW and off-grid/captive power capacity of around 374MW from various renewable energy sources mainly wind, small hydro, biomass and solar energy has been set up as on 30.06.2009. This corresponds to about 9 per cent of the total power generation installed capacity from all sources in the country. Contribution to energy mix is estimated at around 3%. In addition, a large number of decentralized renewable energy systems/devices, such as biogas

plants, solar photovoltaic systems, solar cookers, solar water heating systems, wind pumps deployed throughout the country are supplementing the energy generation.

(b) A potential of around 90,000 MWeq for energy/power generation from different renewable energy sources (excluding solar) in the country has been estimated which include 48,561 MW from wind, 14.294 MW from small hydro and 26,367 MW from bio-power. The potential for solar energy is estimated for most parts of the country at around 20 MW per square kilometer of open, shadow free area covered with solar collectors.

(c) State-wise and resource-wise details of renewable power generation installed capacity as on 30.6.2009 are given in Statement (*See* below). Variations are due to variation in available resource potential as well as in proactive action taken by the State authorities. Leading States in terms of total capacity are Tamil Nadu, Maharashtra, Karnataka, Gujarat, Rajasthan and Andhra Pradesh.

(d) A target for renewable power capacity addition of 15,000 MW from renewable energy sources (14,000 MW grid-interactive and 1,000 MW off-grid/distributed) has been set during the Eleventh Plan period.

Statement

State-wise details of cumulative grid interactive renewable power installed capacity as on 30.6.2009

Sl. No.	States/UTs	Small Hydro Power (MW)	Wind Power (MW)	Bio-Power Biomass Power (MW)	Solar Waste to Energy (MW)	Total Power (MW)	Capacity (MW)
1	2	3	4	5	6	7	8
1.	Andhra Pradesh	180.83	122.50	368.25	35.66	0.10	707.34
2.	Arunachal Pradesh	61.32				0.02	61.34
3.	Assam	27.11					27.11
4.	Bihar	54.60					54.60
5.	Chhattisgarh	18.05		156.10			174.15
6.	Goa	0.05					0.05
7.	Gujarat	7.00	1591.90	0.50	0.50		1599.90
8.	Haryana	62.70		6.00			68.70

1	2	3	4	5	6	7	8
9.	Himachal Pradesh	235.92		7.20			243.12
10.	Jammu and Kashmir	121.83					121.83
11.	Jharkhand	4.05					4.05
12.	Karnataka	573.45	1351.00	294.18	1.00		2219.63
13.	Kerala	133.87	27.00	0.72		0.02	161.61
14.	Madhya Pradesh	71.16	212.80	3.42	2.75	0.10	290.23
15.	Maharashtra	211.33	1967.70	146.50	1.00		2326.53
16.	Manipur	5.45					5.45
17.	Meghalaya	31.03		13.80			44.83
18.	Mizoram	24.47					24.47
19.	Nagaland	28.67					28.67
20.	Orissa	44.30	3.20	2.46			49.96
21.	Punjab	123.90		58.00	9.25	0.32	191.47
22.	Rajasthan	23.85	735.40	31.30		0.15	790.70
23.	Sikkim	47.11					47.11
24.	Tamil Nadu	90.05	4373.90	402.66	4.25	0.05	4870.91
25.	Tripura	16.01					16.01
26.	Uttar Pradesh	25.10		379.36	5.00	0.38	409.84
27.	Uttaranchal	127.92				0.05	127.97
28.	West Bengal	98.40	1.10			0.05	99.55
29.	Andaman and Nicobar Islands	5.25				0.10	5.35
30.	Chandigarh						
31.	Dadar and Nagar Haveli						
32.	Daman and Diu						
33.	Delhi						
34.	Lakshadweep					0.76	0.76
35.	Pondicherry					0.02	0.02
	TOTAL: (MW)	2454.78	10386.50	1870.45	59.41	2.12	14773.26

MW = megawatt